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**Faculty of Pharmacy in Hradec Králové**

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**Title of diploma thesis:** In vitro effects of some quinazoline derivatives on isolated rat trachea

Adhatoda vasica (syn. Justicia adhatoda) is especially used for treatment asthma in a folk medicine. Its main effective substance is an isoquinoline alkaloid vasicine. The aim of this study was to determine the bronchodilator effects of the new isoquinoline derivatives, 4-(3-(piperidine-1-yl)propyloxy)quinazoline-1-oxide (VN-024) and 2-(3-(piperidine-1-yl)propylsulphanyl)quinoxaline hydrochloride (VN-034). To determine bronchodilator effect of research substances we used the methodology of isolated rat trachea. At first, we contracted rat trachea by carbachol and gradually relax by the cumulative addition of test substance. At the end of the experiment, the maximum tracheal relaxation was induced by theophylline ( $10^{-2}$  M). At program GraphPad we calculated  $EC_{50}$  from the curves values of tested compounds and obtained results were compared with the dilatation effect of theophylline. Both tested substances in compare  $EC_{50}$  values showed much higher bronchodilator effect than theophylline.